MR Solutions' new 3D in vivo confocal microscope for use in preclinical research provides a magnification range of up to 1000 times, allowing researchers to examine cellular details within a live small animal eliminating the need for a surgical biopsy - saving time and substantially reducing costs.

MR Solutions, the world leader in preclinical scanning, has partnered with Optiscan[1] to introduce CellLive
TM
, their second generation endomicroscopy platform to the preclinical market. The handheld Optiscan probe which is less than 3.6 mm in diameter delivers micron – smaller than a millionth of a metre - resolution. The Optiscan uses a fluorescence
2
, confocal
3
imaging system to achieve this extraordinary level of detail imaging.

This new scanning technique will be particularly valuable to researchers tackling the complexities of translational medicine – taking science to the bedside - and drug development in diverse areas; including cancer, tissue engineering, inflammation, vascular disease and neuroscience.ÂÂ While conventional fluorescence microscopy enjoys widespread use in all of these applications, CellLIVE can be used where bench microscopes are too cumbersome - taking the microscope to the tissue.

For example, in regenerative medicine research, it is possible with CellLIVE to track the migration of stem cells and cellular interactions during implantation. In cancer research, it is possible to track the cellular interactions of candidate therapeutic interaction. And, in the study of inflammation, the migration of inflammatory cells in living systems can be directly observed.

In 2012, MR Solutions was the first company to develop a commercial preclinical scanner which could dispense with the usual liquid helium cooling system in their new bench top MRI

systems. This was achieved using a revolutionary magnet design incorporating new superconducting wire enabling the use of a standard low temperature fridge to cool the magnet to the required 4 degrees Kelvin (minus 269 degrees C). The company developed a commercial cryogen free 3T range of preclinical bench top MRI scanners in 2012, followed by the more powerful 7T range in 2014 and a 4.7T model in 2015.

MR Solutions is continually adding further capabilities to its imaging solutions and the introduction of CellLive™ brings new uses for existing technologies.

Dr David Taylor, CEO, of MR Solutions explained his philosophy, “Researchers don’t want to put in old technology and have to live with that for years to come. They want the new cutting edge technologies which offer better results, take up less space and usually cost a lot less. We are dedicated to providing the most advanced capabilities in preclinical scanning. This includes MRI where we lead the world, and through partnership to offer optical solutions. This new technology from Optiscan fits in with our range of scanners – powerful but accessible.”

MR Solutions has over 30 years’ experience and in excess of 1000 installations across the world. Its scanners are renowned for their excellence in terms of superior soft tissue contrast and molecular imaging ability.

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